50 YEARS
1972 - 2022

AMATEUR BOAT BUILDERS' ASSOCIATION

February March 2022

A BOAT MADE FROM TIMBER PALLETS - NOW THAT'S UNUSUAL

Over the years we have heard of many unusual materials for boat building. ABBA member, Mike Nowland travelled down from Geraldton to tell us how he has gone about building a boat using timber from pallets.

The first question people ask Mike is, why build a boat out of pallets? Mike's good mate in Geraldton said that he thought Mike could build a boat, but why not buy some decent timber and build a "proper" boat if you are going to all that effort. This will be addressed later.

Where did the idea to build a boat from pallets come from? Mike and his mate Ron own a 14' tinnie all set up to go crayfishing. As well as a feed of crays, it gives them a reason to get out of bed. They go out about a kilometre off the beach at Geraldton. Their pots suffer a bit of damage from the reef and they were discussing materials to build some new pots. The choice was jarrah or pine. They decided on pine and had the idea of using some old pallets that had been lying around the yard for many years. Just then Mike had what he calls a Douglas Adams moment (of Hitchhikers Guide to the Galaxy fame) who said that ideas sleet through the atmosphere and occasionally bury in someone's head and don't go out the other side. Why not build a boat from pallets as well said Mike.

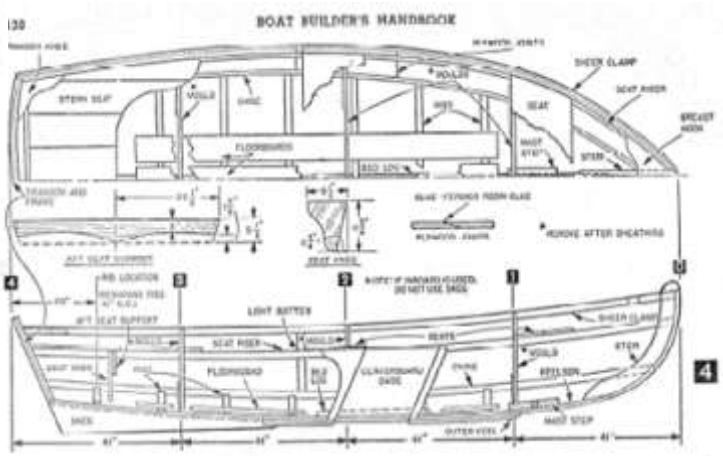
It had to be a "proper" boat if they were going to all that effort. They were looking for something that would carry two men in comfort and be able to tackle the choppy ocean seas off the wharf in Geraldton.

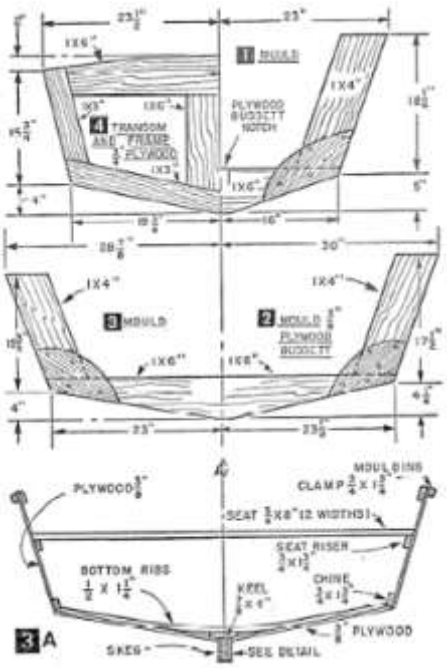
They knew what a boat looked like but neither Mike nor Ron had ever built one. They started sketching their ideas literally on the back of an envelope that was on the table. It was decided that hard chines were needed as they were thinking of standard 1,200 x 1,200 mm pallet timber. The next stage was to get some drawings so Mike rang a draughtsman friend in Perth and asked if he could draw up a set of plans. A few days later, his mate e-mailed them an article from the internet with details of a boat that might fit the bill. It was a 14 ft sea skiff that seemed to tick all the boxes they were looking for. It could be configured with sails, an inboard or outboard engine or as row boat. To get some idea of the age of the article, Mike looked up details of the recommended outboard and it went out of production in 1952.

Mike had some 14 ft long pallets from a delivery of roofing material that had been lying around for 18 years. His mates helped move it to his shed at the back of his house. They could get some nice long lengths and plenty of short bits from it.

The completed framework.

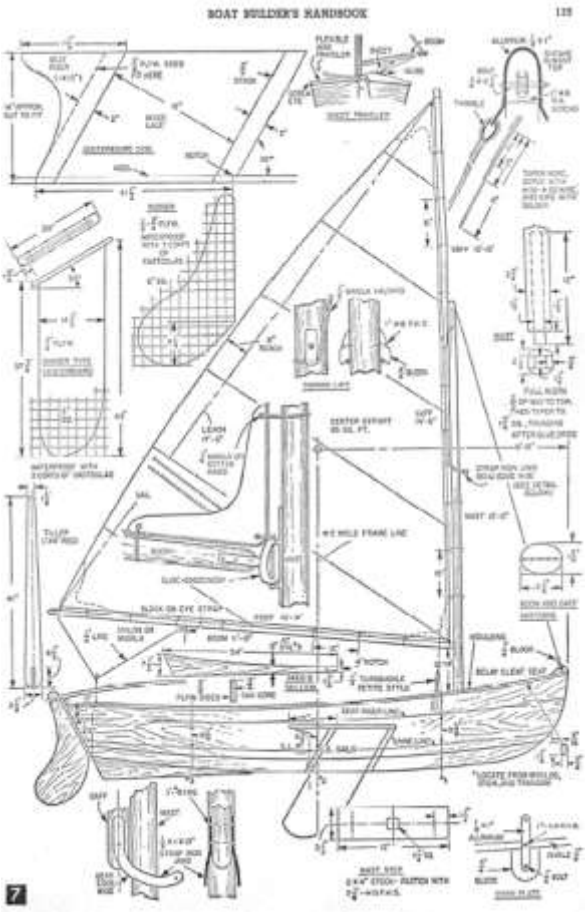
As well as liking the design, Mike was impressed with the construction method outlined in the article which involved building three moulds, the stem and the transom. Then burying four posts in the ground at a convenient working height to accept the moulds. Fit the stem and transom in their correct positions and you have an upside-down shape of the boat. No matter how fast they could build their boat with posts buried in the ground, they couldn't keep ahead of the Geraldton termites. They also wanted to work out of the sun so a support structure was built on top of a 2 m x 1 m heavy bench that Mike already had in his shed.

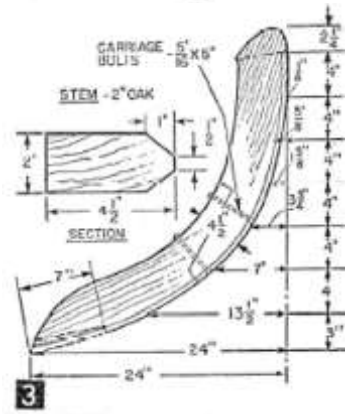




Mike was comfortable using a mix of imperial and metric units even on the one piece of timber such as a 48 inch by 250 mm board. Whatever worked in the situation.

To make the three moulds, the stem and transom, Mike marked out the offsets shown in the article on 3 mm MDF, cut them out, laid them on pieces of wood and cut around them.





They had a 6hp outboard which would be perfect, so had no need for sails but wanted to keep the option of fitting them at some stage. They thought it would be difficult to build a sail and even a mast out of pallet timber but made provision in the design to fit one later.

With a material list, they could assemble (not scrounge) the required timbers. A lot of the timber in the list was 1 ¾" x ¾" ("19 mm by 40 something mm") which was great as much of the pallet boards were 95 to 105 mm wide and 25mm thick which allows two 45 to 50 mm x 19 mm boards to be obtained from them.

The plans called for 3/8" ply on the sides and ½" on the bottom. The ply used on pallets is very poor quality and not considered suitable, so it was decided to use solid timber also recovered from pallets.

It's a small place Geraldton and the word spread that they needed some extra wood, so their friends and neighbours kindly donated some large 3 m x 2.4 m pallets used to transport things like spa baths to Geraldton and even a jarrah pallet for use where extra strength is required. More timber from an internal office was donated for use in the moulds and a mate provided old patio timbers for the mould frames.

MATERIALS LIST—SEA SKIFF

No.	Size and Description	Use
	LUMBER REQUIRED	
2	¾ x 1¾" x 14½'	clamps
2	¾ x 1¾" x 14½'	seat risers
2	¾ x 1¾" x 14'	chines
2	⅞ x 4" x 12'	keelson
1	¾ x 1½ x 8'	outside keel
2	¾ x 1¼" x 14½'	moldings
6	½ x 1¼" x 4½'	ribs
1	¾ x 3" x 8'	transom frame ·
1	1¼ x 10" x 3'	breast hook and transom knees
1	2 x 8" x 4'	stem
1	½ x 1½" x 4'	outside stem
		skeg
3	¾ x 8" x 12'	seats
		aft seat support
1	1 x 4" x 12'	mold frames
1	1 x 6" x 12'	mold frames
1	2 x 10" x 12'	form
	PLYWOOD REQUIRED	
4	⅜" x 4 x 8'	planking
1	¾ x 24 x 48"	transom
	waste from ⅝" plywood or ⅝ x 6" boards	floor boards
	FASTENINGS	
4 gross	1" fh screws	
6 dozen	1½" fh screws	
3 dozen	1¾" fh screws	
3 dozen	#10 x 2" fh screws	
1 lb.	1¼" galv. shingle nails	
2	⅜ x 5" carriage bolts	
1 pt	Kuhls aviation glue	
1 lb	Weldwood resin glue	
	paint as needed	

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A pallet has boards top and bottom with gluts separating them. Gluts are typically 35 or 45 mm thick x 100 mm wide making them a valuable resource. People pulling pallets apart soon realise that a pallet is greater than the sum of its parts. "They are tough little sods to pull apart". Mike and Ron started with a crowbar, but it was hard work and damaged the wood. They then bought a flat wrecking bar from Bunnings which was much better but still too much grunt for two old blokes. Mike built the device on the right which made a big difference. It is about 6 ft long to give leverage. It has two little radiused feet. The device is placed under a board, adjacent to a glut and is used to pry the board off the glut.

Boards will come off in 3 ways.

- The board with nails attached will come of the glut cleanly.
- The board will come off but the nails will pull through and remain in the glut.
- The board and glut will come apart, but a chunk of wood will be left behind. This chunk can be glued back in place if using the board for a chook pen but not for building a boat.

Along the way Mike learnt that the colour on some of the magazines of nails used in nail guns can be a glue. This doesn't help the nails come out of the timber any easier.

On the left is a stack of timber from the spa pallets

Mike said that the pallet timber is "just pine" and though to be either Pinaster or Radiata pine.

This picture shows Mike's shed. In the foreground is his thicknesser. About 20 ft back is his buzzer (jointer), which is a steel bench with cutting blades to make a flat surface. Outside the back door is another bench making a long collection of surfaces all at the same height. The boards on the floor are 18 ft long from Mike's long pallets. They have more timber than they need which means they don't have to fully use each length and have some flexibility to select the best available parts of each length and exclude the poorer sections.

The process they used was to start with a nominal 100 x 25 mm board and pass it over the buzzer as many times as needed to get a clean flat surface. This flat surface was then held against the vertical fence of the buzzer and planed until you get another clean surface at right angles to the first. This is repeated with the other two faces to get a board with a rectangular cross section. These boards are then progressively passed through the thicknesser to give the desired thickness of 22 mm (7/8").

In Mike's separate workshop he has a saw bench set up to cut the 22 mm thick boards to a width of 45 mm thus getting two 45 x 22 mm boards from each original board.

Having most of the timber, the next stage was to make the moulds. Not having built a boat, Mike didn't know what the rules are and what things a boat builder would learn in a lifetime of building boats. He didn't know how accurate the hull and moulds need to be. He imagined that if sitting in the stern of a 14ft boat and it was out by 3/16" at the front, he wouldn't see it. Being an ex-fitter, Mike decided to make the moulds "right", or as close to the plans as he could. Starting with the plywood top on his 2m x 1m steel bench, he used a scrapper and chisel to remove the residue of glue and paint from its last 22 years of use. He followed this up with an orbital sander and two coats of white undercoat. The ply top was absolutely square so Mike marked out a centre line and patiently marked out the layouts of the three moulds, the stem and the transom in different colours so they would stand out while he took dimensions and measured angles from them.

The moulds Mike made were "absolutely mickey mouse" and what you would expect of a fitter. He was very happy with them. His mate Ron felt that they didn't need to be so accurate and Mike agreed but felt that if he made them spot on, he couldn't be wrong.

The next step was to set up moulds one, two and three, the transom and the stem on top of his bench. He started with the centre mould first then worked outwards towards the transom and stem so any errors didn't accumulate and extend from one end to the other. It took a lot of thought to work out the best method to achieve this so a lot of coffee was drunk and Mike nearly wore out his chair while sitting and thinking.

He marked a centre line on the bench and lines for the locations of the moulds. He also marked centrelines on the moulds. Using the cross hairs on the bench and a plumb bob, he located the central mould on the bench top. He used a spirit level to get it vertical before clamping it in position. Moulds one and three were installed parallel to the first.

Mike asked who has too many clamps? He has about 100 and still doesn't have enough.

Mike was driving around a bend in the road near Lake King and saw lots of bolts strewn on the ground that must have fallen from an earlier vehicle. He stopped and picked them up. Not to scrounge the bolts of course, but to stop a ½" bolt going through the windscreen of the next person. He also found a bag with the nuts and washers. They have been taking up space in Mike's shed since 2002 but he knew they would come in handy one day and they did, to secure the moulds to the frame.

Mike says he make a pretty reasonable dove tail joint but prefers to use a 4" nail. Despite this view, he put in a great deal of effort to set up the moulds as accurately as possible. He got pleasure in sorting out problems and satisfaction in doing things right the first time.

Mike marked pieces "Port" and "Starboard" to help endure the pieces were put in the correct location. He went to a lot of trouble with the bracing to make it very rigid so it wouldn't move. The planking attaches to the transom and stem but the three moulds are just there to form the hull shape and are not part of the finished boat.

As there is no real reference point to positively locate the transom, it is very difficult, other than asking Ron to hold it in position for a month. It is a challenge to get the location, height and angle of the transom correct. You move something and everything else moves with it. The picture below shows the brace that holds it all in its final position.

To check the alignment, they used Mike's cheap laser on a tripod and shot a line forward from the transom. The laser beam blocked each string line hanging from the moulds so Mike believes it is lined up within 0.5 mm. You will never see it but Mike knows the setup is accurate.

Mike said earlier that the gluts from the pallets were very valuable pieces of timber. He machined them from about 45 mm to exactly 35 mm thick and used them to make the transom.

Mike wasn't sure how strong the transom needed to be so he edge glued the timber and fitted four pieces of 5/16" galvanised threaded rod running from top to bottom. The countersunk holes in the bottom of the transom show their location. He bought the rod many years ago for another project but had some left over. Again he kept it in his shed as he thought it would come in useful one day.

He drilled the holes by aligning the two top pieces together and clamping them against the bench. Using a long series 3/8" drill bit, he drilled through the top piece and about 40 mm into the lower piece. Mike kept the drill vertical in one plane and had Ron sighting it in the other to get the drill square. This was repeated with the remaining planks using the 40 mm deep hole as a guide for the next pair. He drilled larger diameter holes in the top and bottom planks to countersink the nuts and will plug these holes later. It seems simple now that it is finished but it took a lot of thinking as well as care and attention to make it happen. Mike felt that it worked out well resulting in a very strong transom.

The final cut-out for the outboard will be done later as the remaining timber is still marked with the centre line to use as a reference to line things up again if anything shifts but nothing has so far.

The picture below shows a bulkhead adjacent to the forward mould. This bulkhead will be part of the finished boat. It will support a forepeak with a hatch giving space to stow the anchor, flares and some water. The original design didn't include a forepeak but Mike felt that it would add stiffness which the boat might otherwise have lacked by using planks rather than plywood.
It took a lot of work to get the stem supported in its correct position as there isn't anything to hang it off. To make lay-out markings standout, Mike keeps some white undercoat handy and paints the area before hand as seen in this picture.

The ribs were made from the gluts. The plans called for the ribs to be 19 mm thick but Mike's will be 30 mm. The wider rib will be used in the forepeak but the majority will be narrower.

Mike's next challenge is the cladding. He has to weigh up the options and work out how to do it. The original design envisioned using plywood but Mike is keen to use planks from the pallets. The planks are too short so they would need to be scarf or finger jointed which can be done. Another thought Mike had was to cut the planks into thinner strips using a bandsaw and apply three layers of diagonal planking on the floor and two layers on the sides. It would take "a hell of a lot of glue" but it may help overcome the problem of bending the planks to form the required shape of the hull.

It was meant to be completed this season but Mike and Ron's priorities have changed as they picked up a bargain. It was a 26 ft ex sea rescue boat with 2 x 70 hp motors and a licenced trailer but it needs a new transom.

It might be some time until we see the finished pallet boat as priorities have changed again due to their latest gift pictured below. This 14'6" unfinished motor sailer came with sails, mast, rudder etc. That makes it three boats on the go.

Colin Stevenson kindly presented Mike with a very appropriate book entitled "How to Build Small Boats". Thanks, Mike, for a very interesting and entertaining presentation.

A GRAND DAY OUT

0ur March Toolbox Meeting started out with an offer from ABBA member, David Maumill to show us an example of a Coble, and how to rig it. David restored his 1920's traditional Yorkshire fishing boat. To find out more about Cobles, see later in this article. Our talented amateur boat builders have put in a great deal of effort to make many great projects and it was decided to widen David's idea to provide an opportunity for the boat builders to showcase their pride and joy, and for the rest of us to appreciate and learn more about them. We often see pictures of these boats at our meetings but rarely get the opportunity to admire them close up. Thanks also to all of the boat builders, their family and friends who bought along their boats and made this Toolbox such a great success and thanks to everyone who came along to enjoy a Grand Day Out at the Maylands Public Boat Ramp. Thanks also to those who sent the editor some of their photos from the day so they could be shared with others.

YELLOW PERIL—ROBERTO BARROS

FLINT-O-MAN—DAMIEN BOURKE

AN EYE CATCHING SPEEDBOAT

SIMON DIXON

NO WORRIES —COLIN STEVENSON

RAJAH —BRUCE UREN

SCARBOROUGH MARITIME HERITAGE CENTRE

Yorkshire's last traditional sailing fishing coble

Sailing cobles were once a common sight on the north east Coast of England. Pronounced 'cobble', the name is thought to be rooted in the Celtic 'Ceubal' or the breton 'Caubal', both which simply meant boat. The name has been used for more than a thousand years and was mentioned in the 'Lindisfarne Gospels' The construction of the 'Coble' is remarkably similar to the ancient Viking 'Long Ships'. Many of the features on these boats have Scandanavian names. Indeed, the traditional rigging of the 'Gratitude' would be as familiar to our Norse ancestors as the dashboard of a car is to us today!

The Coble is 'Cinker Built' (the planks slightly overlap each other). The planking is made of Larch timber, and the frames of Oak. A perculiar feature of the 'Coble' is that the planking is constructed first, and the frames 'joggled' in to fit afterwards. This is the reverse of normal boat construction methods. Also, instead of a 'keel' being laid, a flat, horizontal central plank called the 'Ram' forms the first stage of the build.

The 'Coble' was rigged with a traditional 'Dipping Lug' sail. Sometimes, in light winds, a 'jib' was set from the 'Bowsprit', the smaller 'winter mast' being utilised for this purpose. An extremely large 'Coble' might also set a 'Mizzen' mast and sail. The advent of small, lightweight engines made sail obselete in the years following the Second World War, although oars, and an 'auxiliary' sail, with a short mast, were often carried as a safeguard. Sails and oars were eventually discarded when engines became more reliable. Engines had a pronounced effect on the shape and size of the cobles. The method of construction remained similar, but the boats became larger, and more rotund to increase their carrying capacity.

In the 1970's, it was realised that only a precious few of the sleek and graceful old style of coble remained, and a few enthusiasts set about various private restoration schemes.

Plans to build a Traditional sailing coble took a positive turn when Mr David Wharton, of Whitby, received grant aid from the English Tourist Board to build a brand-new vessel.

The 'Gratitude' was intended as a floating museum piece. The Master Builder chosen for the task was Mr Hector Handyside, of Harrison's yard in Amble. Harrison's were one of the last yards to build the old style sailing type. Mr Handyside remembered old boats, some dating from the 19th Century, being scrapped. He said that the 'Gratitude' was built using the 'earliest methods of construction that he had seen', and based upon the 'Yorkshire fishing' type, which is slightly different in shape to the 'cobles' of his native Northumberland. This new boat was launched in 1976.

Mr Alan Richmond, of Scarborough, later purchased the 'Gratitude' and completely restored the vessel. the re-fit included the provision of more authentic fittings and rigging, which were based on rediscovered photographic evidence, and new sails made by the famous James Lawrence sail loft in Brightlingsea.


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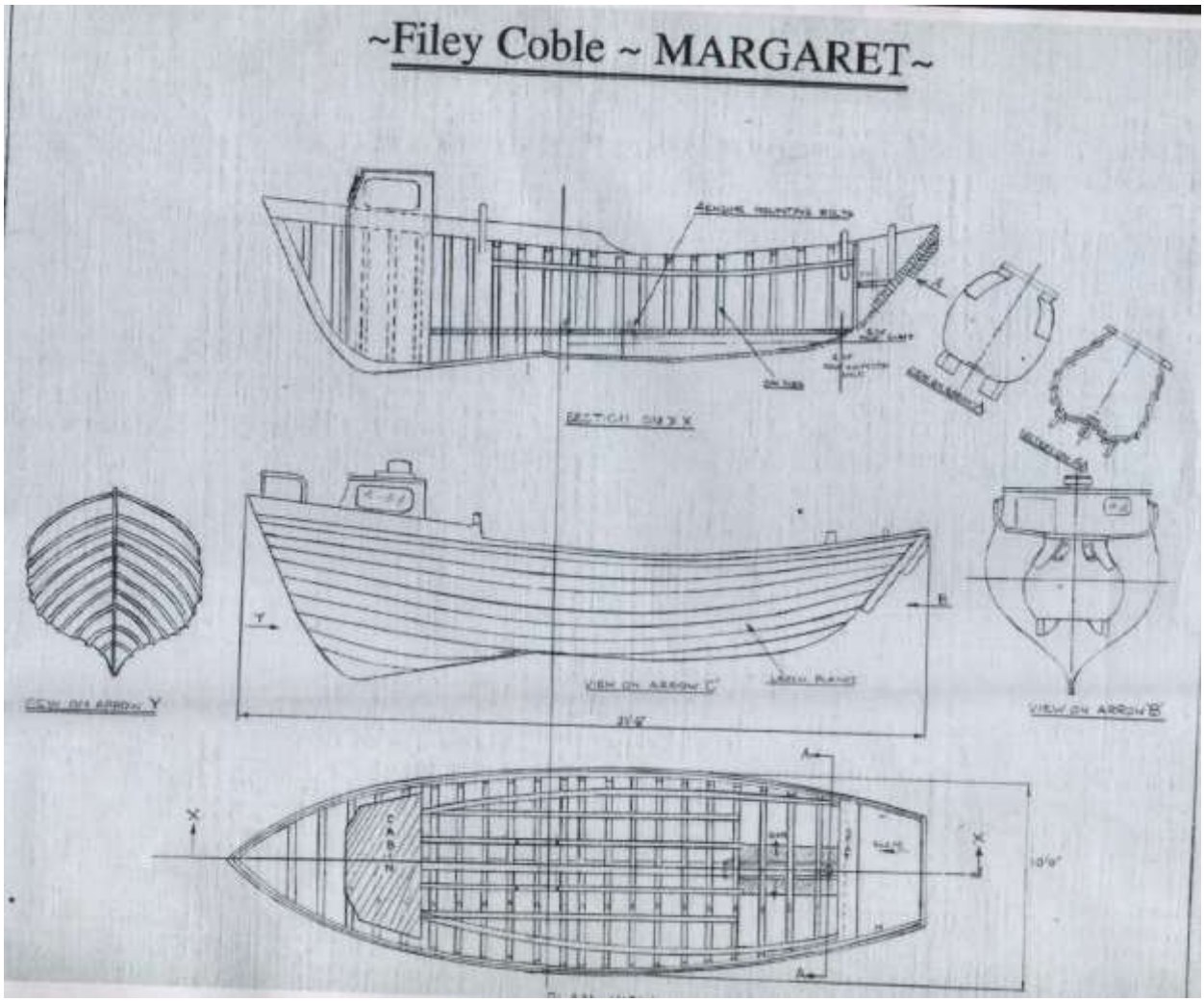
~Filey Coble ~ MARGARET~
VIEW ON ARROW 'Y'
VIEW ON ARROW 'B'

ADMINISTRATION NOTES

ABBA COMMITTEE

President	Rob Bingham	0419 995 422
Secretary	Bruce Cadee	0419 508 785
Treasurer	Andrew Minto	0415 852 333
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Website	Neil McKenzie	0424 533 063
General Committee	Chris Davis	0418 954 602
	Luis Gouveia	0477 172 881
	Bob Harrap	0407 991 901

FUTURE MEETINGS

June Technical Meeting

Our next ABBA meeting will be on Wednesday 1st June 7:00 pm for a 7:30 pm start in the Heritage Room at South of Perth Yacht Club. Earlier this year we heard about building a boat from timber pallets. Continuing this unusual theme and thanks to a lead from ABBA member Bruce Uren, we have a presentation from Andrew Prior about building a boat from MDF. Andrew has often built parts of a boat, but he's never built a whole boat. “After doing some Googling I discovered it's likely nobody has explored the MDF boat thing. After reading how so many people thought it was a terrible idea, I wanted to try it for himself.” Even if you don’t plan to build an MDF boat, come along and find out how Andrew achieved it. Anyone is welcome to attend. Just show up and you will be made welcome.

July Toolbox Visit

Our July Toolbox will be a visit to the premises of O’Connor Wooden Boats, 12 Day Road, Rockingham on Saturday 2nd July from 2 to 4 pm. Tony is a traditional boat builder specialising in the restoration and repair of wooden boats. Another part of his business is CNC machining of wooden kit boats. Simon Dixon’s boat, pictured in the “Grand Day Out” article above started as one of Tony’s kits.

There will be a number of cars travelling to Rockingham so why not share a ride. Contact Bruce Cadee if you would like a lift or are happy to take others.

ADMINISTRATION NOTES (Cont'd)

ABBA LOGO

Members are reminded that Bruce Cadee has made arrangements with Shaun Luong of Image Embroidery at 26 Tulloch Way, Canning Vale (Phone 9456 2324 Mobile 0403 250 389) for an embroidered ABBA logo. The logo can be applied to your own clothing (assuming it can be accommodated in their equipment) or to shirts, caps or hats purchased through Image Embroidery. Feel free to call in on Shaun to look at the limited range of clothing he has on site or visit the following web sites to choose your preferred style, size and colours. The weblinks below are only examples of the wide range available. Half chest measurements are included on the web sites to help ensure you select the correct size. Ladies styles are also available.

Clothing (excluding Logos)

Style 1300 – Aussie Pacific Mens Murray Polo, Navy/White/Ashe or White/Navy/Ashe - **$20.00 + GST each**
Weblink: http://www.aussiepacific.com.au/the-murray-polo-navy-white-s?color=Navy%2FWhite%2FAshe&primary_color=Navy&secondary_color=White

Style 1304 – Aussie Pacific Mens Eureka Polo, Navy/White/Ashe or White/Navy/Ashe - **$21.00 + GST each**
Weblink: http://www.aussiepacific.com.au/mens/polos/eureka-polo-sky-navy-s?color=Sky%2FNavy%2FAshe&primary_color=Sky&secondary_color=Navy

Hats/Caps (excluding Logos)

Style 4199 – Headwear Brushed Heavy Cotton Cap, White/Navy (many other colours available too) - **$6.50 + GST each Weblink:** http://au.headwear.com.au/productDetails.cfm?&prodID=53&prodCatID=2&pageNumber=1

(Also refer poly/cotton legionnaires hats Styles 4057 or 4126 for maximum sun protection under website sub heading 'Hats, Visor & Beanies' http://au.headwear.com.au/productList.cfm?&pCategoryID=7)

Style 4199 – Headwear Brushed Heavy Cotton Cap, White/Navy (many other colours available too) - **$6.50 + GST each (includes poly/cotton legionnaires hats for maximum sun protection under website sub heading 'Hats, Visor & Beanies')**
Weblink:

Style 4223 – Brushed Sports Twill Bucket Hat, White/Navy (many other colours available too) - **$8.00 + GST each**
Weblink: http://au.headwear.com.au/productList.cfm?&pCategoryID=7&page=2

To make your annual membership even more value for money, ABBA will pay for up to 2 logos per financial year to be applied to your items of clothing. The current cost to ABBA is $7.15 per logo. There is no intention for this to be an ABBA uniform so the choice of style and colour is totally yours. If you are seen wearing the logo while building, working on or using your boat or anywhere for that matter it might get people asking questions and wanting to join our association. You are free to deal direct with Image Embroidery but please ensure you get an itemised invoice showing a separate price for the logo and present this to our Treasurer for reimbursement. Bruce Cadee is happy to take orders and liaise with Image Embroidery if you wish.